

## CLAIMS

1. A polynucleotide comprising a nucleotide sequence of  
a promoter region of a gene encoding  $\alpha$  subunit Gm1 of trimeric  
5 G-protein.

2. The polynucleotide according to claim 1, wherein the  
nucleotide sequence of a promoter region is any of the following  
nucleotide sequences (1) to (4):

- 10 (1) the nucleotide sequence of SEQ ID NO: 1,  
(2) the nucleotide sequence of the nucleotide numbers 603  
to 3871 in the nucleotide sequence of SEQ ID NO: 1,  
(3) a nucleotide sequence of (1) or (2) with deletion,  
substitution or addition of one or more nucleotides, said  
15 nucleotide sequence having an ability of controlling the  
transcription of a gene encoding  $\alpha$  subunit Gm1 of trimeric  
G-protein, and  
(4) a nucleotide sequence having an ability of  
controlling the transcription of a gene encoding  $\alpha$  subunit Gm1  
20 of trimeric G-protein, and being complementary to a nucleotide  
sequence of a polynucleotide, wherein said polynucleotide  
hybridizes under a stringent condition to a polynucleotide  
comprising the nucleotide sequence of (1) or (2).

25 3. A plasmid comprising the polynucleotide of claim 1

or 2.

4. A plasmid comprising the polynucleotide of claim 1  
or 2, wherein at the downstream (3' side) of said polynucleotide,  
5 said plasmid contains a polynucleotide of which transcription  
is controlled by said polynucleotide.

5. A plasmid comprising the polynucleotide of claim 1  
or 2, wherein at the downstream (3' side) of said polynucleotide,  
10 said plasmid contains a reporter gene of which transcription  
is controlled by said polynucleotide.

6. A transformed cell in which the polynucleotide of  
claim 1 or 2 is introduced.

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7. A transformed cell in which the plasmid of claim 3  
or 4 is introduced.

8. A transformed cell in which the plasmid of claim 5  
20 is introduced.

9. A method for searching a signal transduction  
controlling substance through a promoter of a gene encoding  $\alpha$   
subunit Gm1 of trimeric G-protein, comprising

25 (1) a first step of contacting the transformed cell of

claim 8 with a test substance,

(2) a second step of monitoring the expression amount of a reporter gene or an index value correlated therewith, after the first step,

5 (3) a third step of evaluating an ability of the above-mentioned substance to control signal transduction through a promoter of a gene encoding  $\alpha$  subunit Gm1 of trimeric G-protein, based on a change in the expression amount or index value correlated therewith monitored in the second step, and

10 (4) a fourth step of selecting a substance having an ability to control signal transduction through a promoter of a gene encoding  $\alpha$  subunit Gm1 of trimeric G-protein, based on the signal transduction controlling ability evaluated in the third step.

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10. A method for evaluating an ability of a substance to control signal transduction through a promoter of a gene encoding  $\alpha$  subunit Gm1 of trimeric G-protein, comprising

20 (1) a first step of contacting the transformed cell of claim 8 with a test substance,

(2) a second step of monitoring the expression amount of a reporter gene or an index value correlated therewith, after the first step, and

25 (3) a third step of evaluating an ability of the above-mentioned substance to control signal transduction

through a promoter of a gene encoding  $\alpha$  subunit Gm1 of trimeric G-protein, based on a change in the expression amount or index value correlated therewith monitored in the second step.

5           11. A method for searching a substance which binds to the polynucleotide of claim 1, comprising

          (1) a first step of contacting the polynucleotide of claim 1 with a test substance,

          (2) a second step of checking the presence or absence of  
10 formation of a complex of the polynucleotide with the test substance, after the first step, and

          (3) a third step of selecting a substance which binds to the polynucleotide, based on the analysis result, obtained in the second step, of the presence or absence of formation of a  
15 complex.

          12. A method for purifying a substance which binds to the polynucleotide of claim 1, comprising

          (1) a first step of contacting the polynucleotide of claim  
20 1 with a sample to form a complex of the polynucleotide with a substance, wherein said substance is contained in the sample and binds to the polynucleotide, and

          (2) a second step of isolating the substance which binds to the polynucleotide, from a formed complex, after the first  
25 step.

13. A kit for screening a signal transduction  
controlling substance through a promoter of a gene encoding  $\alpha$   
subunit Gm1 of trimeric G-protein, comprising the transformed  
5 cell of claim 8 and a reagent for measuring the expression amount  
of a reporter gene or an index value correlated therewith.

14. A medicine for neurological disorder and/or  
psychiatric diseases comprising as an active ingredient a  
10 compound having an ability to control signal transduction  
through a promoter of a gene encoding  $\alpha$  subunit Gm1 of trimeric  
G-protein, obtained by the searching method of claim 9 or 11,  
or a pharmaceutically acceptable salt thereof, wherein the  
active ingredient is formulated in a pharmaceutically  
15 acceptable carrier.